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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,509	10/31/2003	Dhruva Ranjan Chakrabarti	200314557-1	9606
22879 7590 02/25/2008 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			EXAMINER CHOU, ANDREW Y	
			ART UNIT 2192	PAPER NUMBER
			NOTIFICATION DATE 02/25/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
mkraft@hp.com
ipa.mail@hp.com

Office Action Summary

Application No.

10/698,509

Applicant(s)

CHAKRABARTI ET AL.

Examiner

ANDREW CHOU

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2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-13 have been examined. Claims 1-10, and 12 have been amended.

Response to Amendment

2. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection. (See Carini made of record below)

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 13 are non-statutory as being "a computer program product comprising a computer-usable medium having computer-readable code embodied therein, the computer program product being a source code compiler", thus the computer program product is not yet embodied in executable code format as a computer component. Thus, the computer program product is computer listings *per se*, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a

computer which permit the computer program's functionality to be realized. In contrast, a claimed computer- readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions. MPEP 2106.01 (I)

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Carini US 5,740,443 (hereinafter Carini).

Claim 1:

Carini discloses a method of compiling a computer program with inline specialization, the method comprising: given a call-graph if multiple call-chains in the call-graph have a common call site, inlining the common call site in one or more of the call-chains, without inlining the common call site into all of said multiple call-chains having the common call

site (see for example column 9, lines 30-41, "...selective automatic inlining...", column 9, lines 10-20, FIG. 3, item 301, "sub1", and associated text).

Claim 2:

Carini further discloses the method of claim 1, further comprising:

whenever a call site from routine x to routine y is inlined, new call sites are added from routine x to all routines inlinable within routine y (see for example column 9, line 7, "2. Select Incoming edges for inlining or cloning.").

Claim 3:

Carini further discloses the method of claim 2, further comprising:

materialization of summary information for the new call sites added to the call-graph (see for example column 10, lines 23-43, FIG. 5, step 503, and associated text).

Claim 4:

Carini further discloses the method of claim 3, further comprising:

addition of the new call sites to a global work-list so that the new call sites are considered for inlining (see for example column 7, lines 50-66, FIG. 1, "v3", "v4", and associated text).

Claim 5:

Carini further discloses the method claim 4, further comprising:

addition of dependence relationships between call sites, wherein if a new call site, y, is added because of inlining of call site, x, then y is dependent on x (see for example FIG. 3, item 303, "sub3", and related text).

Claim 6:

Carini further discloses the method of claim 5, further comprising:

patching of the new call site, y, during inline transformation of call site, x, with and generating an intermediate transformation for the new call site, y (see for example column 9, lines 20-30).

Claim 7:

Carini discloses an apparatus (see for example FIG. 4, and related text) for compiling a computer program with inline specialization, the apparatus comprising:

memory configured to store computer-readable instructions and data (see for example FIG. 4, item 114, "RAM");

a processor configured to access said memory and to execute said computer-readable instructions (see for example FIG. 4, item 116, "CPU");

computer-readable instructions stored in said memory and configured to inline a common call site in one or more of the call-chains in a call-graph, without necessarily inlining the common call site into all call-chains having the common call site (see for example column 9, lines 30-41, "...selective automatic inlining...", column 9, lines 10-20, FIG. 3, item 301, "sub1", and associated text).

Claim 8:

Carini further discloses the apparatus of claim 7, wherein whenever a call site from routine x to routine y is inlined, new call sites are added from routine x to all routines inlinable within routine y (see for example column 9, line 7, "2. Select Incoming edges for inlining or cloning.").

Claim 9:

Carini further discloses the apparatus of claim 8, wherein materialization of summary information for the new call sites added to the call-graph (see for example column 10, lines 23-43).

Claim 10:

Carini further discloses the apparatus of claim 9, wherein the new call sites are added to a global work-list so that the new call sites are considered for inlining (see for example column 7, lines 50-66).

Claim 11:

Carini further discloses the apparatus of claim 10, wherein dependence relationships are created between call sites (see for example FIG. 3, item 303, "sub3", and related text).

Claim 12:

Carini further discloses the apparatus of claim 11, wherein the inline transformation patches up an intermediate representation of the new call sites by considering the dependence relationships) before potentially inlining the new call sites (see for example column 9, lines 20-30).

Claim 13:

Carini discloses a computer program product comprising a computer-usable medium having computer-readable code embodied therein, the computer program product being a source code compiler with cross-module optimization (see for example Figure 5, and related text), the compiler including and inline specialization feature such that given a call-graph, if multiple call-chains in the call-graph have a common call site, the common

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call site is inlined in one or more of the call-chains graph, without necessarily being inlined into all of the multiple call-chains having the common call site (see for example column 9, lines 30-41, "...selective automatic inlining...", FIG. 3, item 301, "sub1", and associated text).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Y. Chou whose telephone number is (571) 272-6829. The examiner can normally be reached on Monday-Friday, 8:00 am - 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached on (571) 272-3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.


Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free)

AYC



TUAN DAM
SUPERVISORY PATENT EXAMINER